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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,066	03/31/2004	Sun-Chung Chen	4006-286	4638

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ALEXANDRIA, VA 22314

EXAMINER
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CHEN, ALAN S

ART UNIT	PAPER NUMBER
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2182

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/31/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/813,066

Applicant(s)

CHEN, SUN-CHUNG

Examiner

Alan S. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 11/17/2006 have been fully considered but they are not persuasive. Applicant argues the references fail to teach or suggest integrating a USB connector and a combination connector into a KVM switch cable.

Examiner believes he has established a prima facie case of obviousness as to why one would want to integrate various disparate connectors with one single cable. It is evident from the analogous prior art related to KVM switches that integrating various connectors, such as serial connectors, e.g., PS/2, with monitor connectors (*Fig. 5*) are beneficial clearly due to organization and convenience, without the disadvantages of several loose cables that increase the possibility of snagging to various objects in their vicinity. The cited reference to Behrens et al. clearly demonstrates this. The cited primary reference to Dickens demonstrates a KVM switch having multiple cables includes USB and PS/2 (*Fig. 1 and Paragraph 41 & 119*). Applicant has not argued the motivation as to why any of the references were combined. Therefore the obviousness in integration of cables as well as the signal converter has not been challenged and the rejections are maintained in line with Applicant's amendments.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-12, 14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. Pub. No. 2003/0188049 to Dickens in view of US Pat. No. 6,609,034 to Behrens et al. (*Behrens*).

5. Per claims 1 and 12, Dickens discloses KVM switch cables (*Fig. 1, elements 130, 130', 132, 132', 134, 134', 136, 136', 138 and 138' are all cables*) for connecting a computer (*Fig. 1, elements 112 or 114 are each computers*) to a KVM switch (*Fig. 1, element 110 is the KVM switch*), the KVM switch cables comprising: a set of computer connectors connecting to the computer (*Paragraph 41, standard connectors for keyboard, mouse, video, audio, connect to the computer*), the set of computer connectors comprising a USB connector (*Paragraph 119, Dickens expressly state connection can be a mixture of PS/2 and USB*) for converting USB signals to PS/2 signals and vice versa (*the cables facilitate the USB and PS/2 signals to be transported and converted at the KVM switch, Fig. 1, elements 140 and 144; Paragraph 49-59 disclose converting the signals into data bytes that can be processed by a higher level driver in order to achieve proper emulation of the attached device; Paragraph 119 expressly state connections can be mixtures of USB and PS/2 and supporting different console connections. Clearly the console having a PS/2 connection can communicate with a computer connected via*

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*USB cabling or vice versa; per claim 12, the signal converting device connecting to the cable would be the conversion logic shown in Fig. 1, elements 140 and 144); cables connecting to the set of computer connectors (Fig. 1, element 130-138 and 130'-138' all have cables).*

Dickens does not disclose expressly a combination connector connecting between the KVM switch and the cables to transmit keyboard signals, mouse signals, and video signals.

Dickens also does not disclose expressly aggregating the cables into one single cable.

Behrens discloses a KVM switch cable where multiple types of cables are aggregated into one single cable (*Fig. 5, elements 104, 106 and 108 multiple cables for keyboard, video and mouse all aggregated into one cable, element 100; Fig. 5, element 102*). Behrens also discloses having one combination connector to connect to the KVM switch (*Fig. 5, element 102 is combination connector; Fig. 1, element 8 is the KVM switch which shows single connectors for the single KVM cable shown in Fig. 5*).

Dickens and Behrens are analogous art because they are from the same field of endeavor in the construction of KVM switches.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to have a single combination connector and aggregating the KVM cabling into one single cable.

The suggestion/motivation for doing so would have been to provide compact control and monitoring system which reduces the likelihood of a malfunction due to a loose connection or cable failure by reducing the number of cables and connectors that must be made (*Column 3, lines 29-33 of Behrens*). Furthermore, it would have facilitated a simpler install procedure having

minimized the cables and connectors. Therefore, it would have been obvious to combine Dickens with Behrens for the benefit of improved reliability and convenience.

6. Per claims 2, Dickens combined Behrens discloses claim 1, Dickens further discloses the set of computer connectors further comprises a monitor connector (*Fig. 1, elements 134 and 134' are video connections for monitors*).

7. Per claims 3 and 16, Dickens combined with Behrens discloses claims 2 and 12, Dickens further discloses the monitor connector is a standard VGA HDB-15 connector (*Paragraph 43, "...uses 15 way high density D-connectors"*).

8. Per claims 4,5 and 17, Dickens combined with Behrens discloses claims 2 and 16, Dickens further discloses the set of computer connectors further comprises a speaker connector to transmit audio signals for a speaker (*Fig. 1, elements 136 and 136'*) and a microphone connector to transmit audio signals for a microphone (*Fig. 1, elements 138 and 138'*).

9. Per claim 6, Dickens combined with Behrens discloses claim 1, Dickens further discloses using the USB standard, and hence it's standard defined connection types, e.g., type A connector (*Paragraph 119*).

10. Per claims 7-9, 18 and 19, Dickens combined with Behrens discloses claim 1, Behrens further discloses the compact combination connector being a standard 15-pin VGA HDB connector (*Fig. 6, element 102*). As seen in Fig. 5, the connectors have a perpendicular angle with respect to the KVM router and a zero degree tilt angle. It would have been obvious to one of ordinary skill in the art to use this type of connector since it is indeed compact and has enough I/O pins to accommodate various other connector standards such as PS/2 or USB.

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11. Per claim 10, Dickens combined with Behrens discloses claim 7, Dickens further discloses the KVM switch having a PS/2 connector (*Paragraph 41*).

12. Per claims 11 and 20, Dickens combined with Behrens discloses claims 1 and 12.

Dickens and Behrens do not disclose expressly the combination connector being a standard SCSI connector. However, it would have been obvious to a person of ordinary skill in the art to use a standard connector that has enough I/O pins such as the 15 pin VGA connector or something equivalent in order to accommodate for the various signals of the keyboard, mouse and video without having to design an entirely new connector. A SCSI connector has several I/O pins (*see Fig. 3 of instant application*) and therefore, it would have been obvious at the time of the invention to select a SCSI connector based on its ability to accommodate a significant number of I/O pins.

13. Claims 13 and 15 are rejected under 35 USC 103(a) as being unpatentable over Dickens in view of Behrens in further view of US Pat. Pub. No. 2004/0088468 to Hasegawa.

Dickens combined with Behrens discloses claim 12. Dickens combined with Behrens does not disclose expressly the signal converting device, e.g., converting from USB to PS/2 being configured to be in one of the connectors of the KVM switch cable.

Hasegawa discloses a connector that converts signals from USB to PS/2 and vice versa (*Fig. 1, element 1 is a connector that connects to peripheral devices, e.g., element 22; Paragraph 43 discloses the integration of cable element 9, and the connector*).

Dickens combined with Behrens and Hasegawa are analogous art because they are from similar problem solving area in the conversion between USB and PS/2 signals.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to perform conversion between two disparate standards on the cabling and associated cabling connector structures themselves.

The suggestion/motivation for doing so would have been removing the conversion logic from the target or source device, such that complexity would be reduced since neither would need to handle the conversion process. With respect to Dickens, this is simply shifting the conversion complexity from the KVM switch (*Fig. 1, elements 140 and 144*).

Therefore, it would have been obvious to combine Dickens and Behrens with Hasegawa for the benefit of reducing complexity in the design of the target and source devices.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.




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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASC  
1/24/2007

  
KIM HUYNH  
SUPERVISORY PATENT EXAMINER

1/26/07